

CLAIMS:

1. A film-forming unit comprising:
a processing container in which a vacuum can be created,
a stage arranged in the processing container, on which
an object to be processed is placed,
a process-gas supplying means for supplying a process
gas into the processing container,
a heating means for heating the object to be processed
placed on the stage,
a division wall that surrounds a lateral side and a
lower side of the stage,
an inert-gas supplying means for introducing an inert
gas into a stage-side region surrounded by the division wall,
and
a gap-forming member whose inner peripheral portion is
arranged above a peripheral portion of the object to be
processed placed on the stage via a gap and whose outer
peripheral portion is arranged above the division wall via
a gap.

2. A manufacturing unit of a semiconductor device
according to claim 1, wherein:

a contact portion for pressing and fixing the
peripheral portion of the object to be processed is provided
at a lower surface of the inner peripheral portion of the
gap-forming member.

3. A manufacturing unit of a semiconductor device
according to claim 2, wherein:

the gap-forming member is vertically movable.

4. A manufacturing unit of a semiconductor device
according to claim 2, wherein:

a plurality of contact portions are provided at a
predetermined height.

5. A manufacturing unit of a semiconductor device

according to any of claims 1 to 4, wherein:

a height of the gap defined by the division wall and the outer peripheral portion of the gap-forming member is larger than a height of the gap defined by the peripheral portion of the object to be processed and the inner peripheral portion of the gap-forming member.

6. A manufacturing unit of a semiconductor device according to claim 5, wherein:

the height of the gap defined by the division wall and the outer peripheral portion of the gap-forming member is about ten times as large as the height of the gap defined by the peripheral portion of the object to be processed and the inner peripheral portion of the gap-forming member.

7. A manufacturing unit of a semiconductor device according to any of claims 1 to 6, wherein:

a temperature controlling means for setting a temperature of the processing container to be higher than a condensation temperature of the process gas and lower than a decomposition temperature and a reaction temperature of the process gas is provided for the processing container.

8. A manufacturing unit of a semiconductor device according to any of claims 1 to 7, wherein:

a temperature controlling means for setting a temperature of the process-gas supplying means to be higher than a condensation temperature of the process gas and lower than a decomposition temperature and a reaction temperature of the process gas is provided for the process-gas supplying means.

9. A manufacturing unit of a semiconductor device according to any of claims 1 to 8, wherein:

an electrostatic chuck is provided in the stage in order to fix the object to be processed placed on the stage.

10. A manufacturing unit of a semiconductor device according to any of claims 1 to 9, wherein:
the gap-forming member is provided with a heater.

11. A manufacturing unit of a semiconductor device according to claim 10, wherein:
the gap-forming member is provided with a thermocouple.